This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A process for constructing a signaling molecule by labeling a biological molecule, which can bind to a targeted partner, comprising covalently bonding to the biological molecule a labeling agent which is a fluorescent conjugate comprising an oligonucleotide covalently bonded to a rare-earth metal cryptate.

2. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds.

3. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units or of analogous units of nucleotides modified on the sugar or on the base and bonded to one another via natural phosphodiester internucleotide bonds, some of the internucleotide bonds optionally being replaced with phosphonate, phosphoramide or phosphorothioate bonds.

4. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain comprising both ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and analogous units of nucleosides bonded to one another via amide bonds.

5. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of ribonucleotide or deoxyribonucleotide units, one of which may comprise a functional group of NH_2, COOH, CHO, OH, SH, halide, sulfonate, epoxide, or maleimide, introduced onto or generated on said unit, or the functional group introduced using a spacer arm bonded to the terminal phosphate group in the 3' or 5' position.

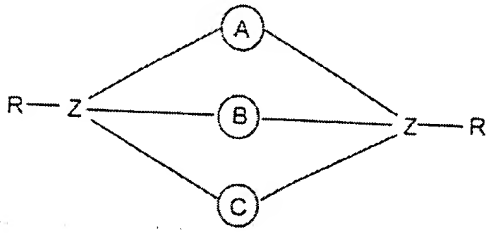
6. (Previously Presented) The process as claimed in claim 5, wherein said unit is the 5' terminal unit or 3' terminal unit.

7. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide comprises a chain of 5 to 50 nucleotides or a chain of 5 to 50 nucleotides and nucleotide or nucleoside analogs.

8. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and of analogous units of nucleosides bonded to one another via amide bonds, said oligonucleotide comprising at least 5 phosphodiester internucleotide bonds at the end intended to be bonded to the cryptate.

9. (Previously Presented) The process as claimed in claim 1, wherein the rare-earth metal cryptate is bonded covalently to the oligonucleotide either directly or via a spacer arm.

10. (Previously Presented) The process as claimed in claim 1, wherein said rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound of formula



I

in which Z is an atom with 3 or 4 valencies, R is nothing or represents hydrogen, a hydroxy group, an amino group or a hydrocarbon-based radical, the divalent radicals (A) , (B) and (C) are,

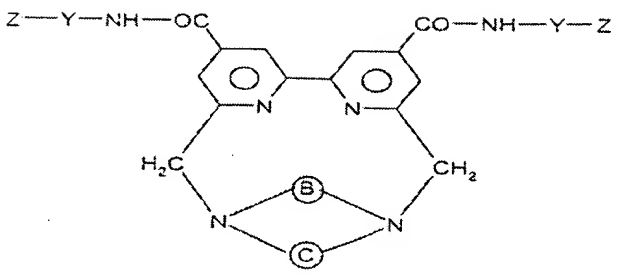
independently of each other, hydrocarbon-based chains which optionally contain one or more hetero atoms and are

optionally interrupted with a hetero macrocycle, at least one of the radicals Ⓐ, Ⓑ and Ⓒ, also comprising at least one molecular unit or consisting essentially of a molecular unit, said molecular unit having a triplet energy which is greater than that of the emission level of the complexed rare-earth metal ion.

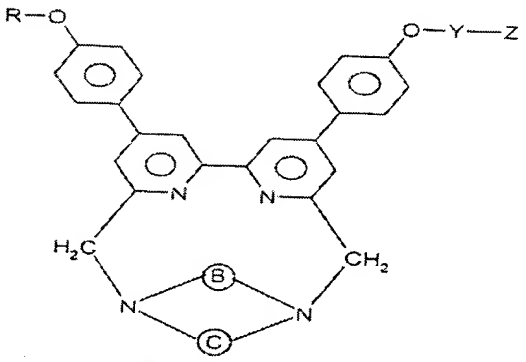
11. (Previously Presented) The process as claimed in claim 10, wherein the rare-earth metal cryptate consists of a rare-earth metal salt complexed with one of the macrocyclic or macropolycyclic compounds below:

[2.2.phenanthroline]; [2.2.phenanthroline amide]; [2.2.anthracene]; [2.2.anthracene amide]; [2.2.biisoquinoline]; [2.2.biphenyl-bis-pyridine]; [2.2.bipyridine]; [2.2.bipyridine amide]; the macropolycycles trisbipyridine, trisphenanthroline, phenanthrolinebisbipyridine, biisoquinolinebisbipyridine, bisbipyridine diphenylbipyridine; a macropolycyclic compound comprising a molecular unit chosen from bipyrazines, bipyrimidines and nitrogen-containing heterocycles comprising N-oxide groups.

12. (Previously Presented) The process according to claim 1, wherein the rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound corresponding to one of the formulae II or III below:



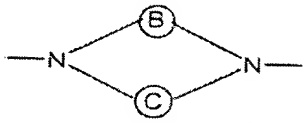
II



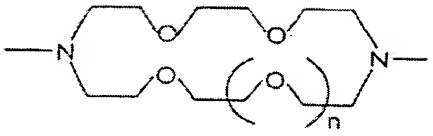
III

in which:

- the ring of formula



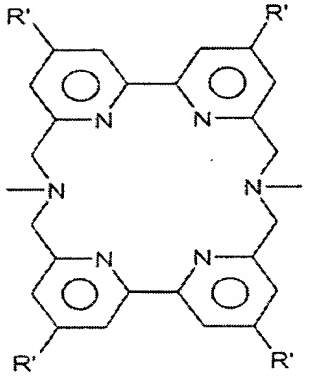
is one of the following rings:

1) 

n = 0 or 1

$[N_2O_4]$ macrocycle or cycle (22)

$[N_2O_3]$ macrocycle or cycle (21)

2) 

bisbipyridine macrocycle

-Y is a spacer group or spacer arm which consists of a divalent organic radical, chosen from linear or branched C_1 or C_{20} alkylene groups optionally containing one or more double bonds and/or optionally containing one or more hetero atoms such as oxygen, nitrogen, sulfur or phosphorus or one or more carbamoyl or carboxamido group(s); chosen from C_5 to C_8 cycloalkylene groups or chosen form C_6 to C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups;

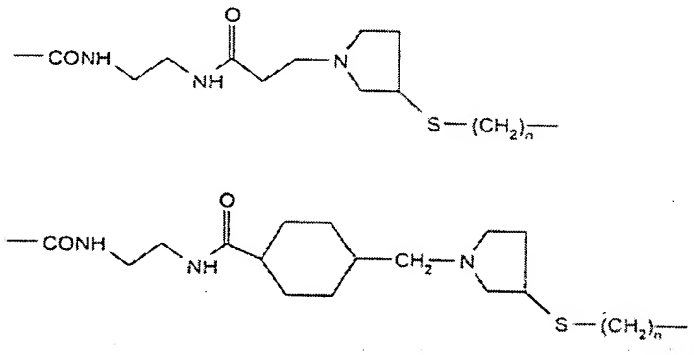
-Z is a functional group capable of bonding covalently to a biological substance;

-R is a methyl group or represents the group -Y-Z;

-R' is hydrogen or a group -COOR" in which R" is a C_1 to C_{10} alkyl group or alternatively R' is a group -CO-NH-Y-Z.

13. (Previously Presented) The process as claimed in claim 1, wherein the rare-earth metal cryptate is bonded to the oligonucleotide via a spacer arm consisting of a divalent organic radical chosen from C_1-C_{20} linear or branched alkylene groups optionally containing one or more double bonds or triple bonds and/or optionally containing one or more hetero atoms, such as oxygen, nitrogen, sulfur, phosphorus or one or more carbamoyl or carboxamino group(s); C_5-C_8 cycloalkylene groups and C_6-C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups.

14. (Previously Presented) The process as claimed in claim 13, wherein the spacer arm is chosen from the groups:



in which n = 2 to 6, and -CONH-$(CH_2)_6$-, the attachment via the group -CONH taking place on the cryptate.

15. (Previously Presented) The method as claimed in claim 1, wherein the rare-earth metal cryptate is a europium cryptate.

16. (Previously Presented) The process as claimed in claim 15, wherein the rare-earth metal cryptate is the europium cryptate Eu trisbipyridine or Eu [bisdiethoxybipyridine.bipyridine].

17. (Previously Presented) The process as claimed in claim 1, wherein the fluorescent conjugate is used as the only label or as one of the fluorescent labels in the assay.

18. (Canceled)

19. (Previously Presented) The process as claimed in claim 1, wherein, in addition to said fluorescent conjugate, a fluorescent label comprising an acceptor fluorescent compound in the assay.

20. (Previously Presented) A conjugate, comprising:

(1) a rare-earth metal cryptate;

(2) an oligonucleotide; and

(3) a biological molecule having a recognition role and which can bind to a partner,

(1), (2) and (3) being linked by covalent bonds.

21. (Previously Presented) The conjugate according to claim 20, wherein the biological molecule is one member of a pair molecules capable of binding specifically to one another.

22. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds.

23. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units or of analogous units of nucleotides modified on the sugar or on the base and bonded to one another via natural phosphodiester internucleotide bonds, some of the internucleotide bonds optionally being replaced with phosphonate, phosphoramide or phosphorothioate bonds.

24. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain comprising both ribonucleotide or deoxyribonucleotide units

bonded to one another via phosphodiester bonds and analogous units of nucleosides bonded to one another via amide bonds.

25. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of ribonucleotide or deoxyribonucleotide units, one of which may comprise a functional group of NH_2, COOH, CHO, OH, SH, halide, sulfonate, epoxide, or maleimide, introduced onto or generated on said unit, or the functional group introduced using a spacer arm bonded to the terminal phosphate group in the 3' or 5' position.

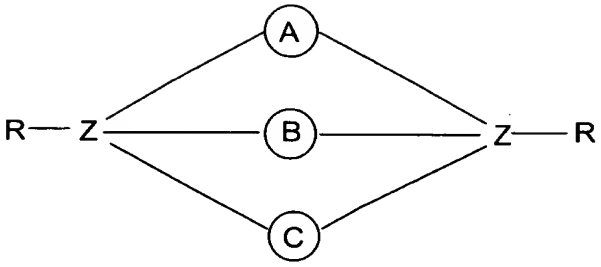
26. (Previously Presented) The conjugate as claimed in claim 25, wherein said unit is the 5' terminal unit or 3' terminal unit.

27. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide comprises a chain of 5 to 50 nucleotides or a chain of 5 to 50 nucleotides and nucleotide or nucleoside analogs.

28. (Previously Presented) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and of analogous units of nucleosides bonded to one another via amide bonds, said oligonucleotide comprising at least 5 phosphodiester internucleotide bonds at the end intended to be bonded to the cryptate.

29. (Previously Presented) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is bonded covalently to the oligonucleotide either directly or via a spacer arm.

30. (Previously Presented) The conjugate as claimed in claim 20, wherein said rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound of formula



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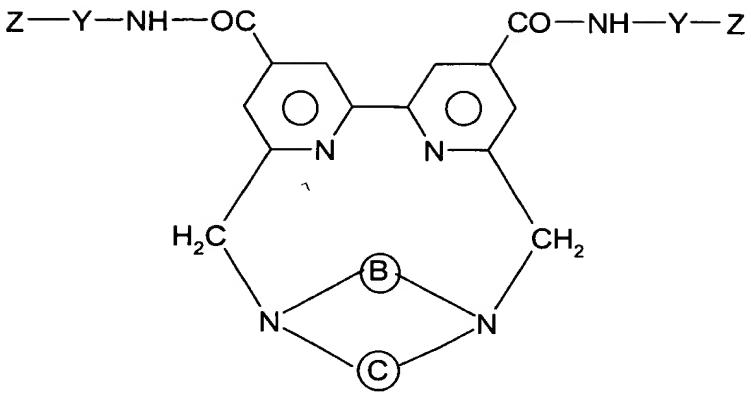
in which Z is an atom with 3 or 4 valencies, R is nothing or represents hydrogen, a hydroxy group, an amino group or a hydrocarbon-based radical, the divalent radicals Ⓐ , Ⓑ and Ⓒ , are, independently of each other, hydrocarbon-based chains which optionally contain one or more hetero atoms and are optionally interrupted with a hetero macrocycle, at least one of the radicals Ⓐ , Ⓑ and Ⓒ , also comprising at least one molecular unit or consisting essentially of a molecular unit, said molecular unit having a triplet energy which is greater than that of the emission level of the complexed rare-earth metal ion.

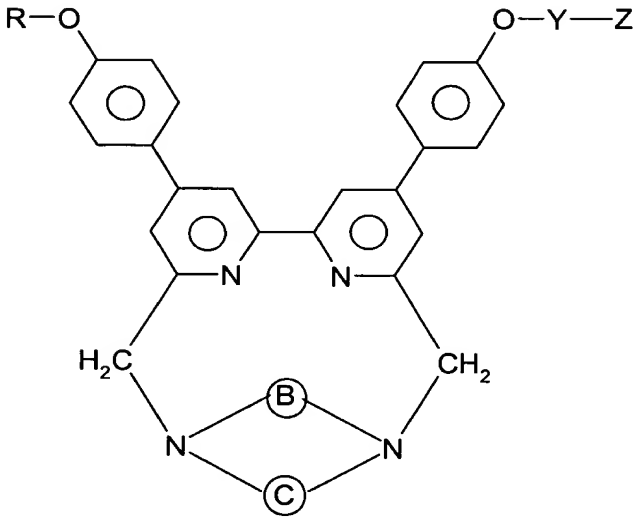
31. (Previously Presented) The conjugate as claimed in claim 30, wherein the rare-earth metal cryptate consists of a rare-earth metal salt complexed with the macrocyclic or macropolycyclic compound of:

[2.2.phenanthroline]; [2.2.phenanthroline amide]; [2.2.anthracene]; [2.2.anthracene amide]; [2.2.biisoquinoline]; [2.2.biphenyl-bis-pyridine]; [2.2.bipyridine]; [2.2.bipyridine amide]; a macropolycycle trisbipyridine, trisphenanthroline, phenanthrolinebisbipyridine, biisoquinolinebisbipyridine, or bisbipyridine diphenylbipyridine; or a macropolycyclic compound comprising a molecular unit of a bipyrazine, a bipyrimidine, or a nitrogen-containing heterocycle comprising an N-oxide group.

32. (Previously Presented) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound corresponding to one of the formulae II or III below:



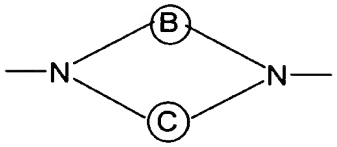
II



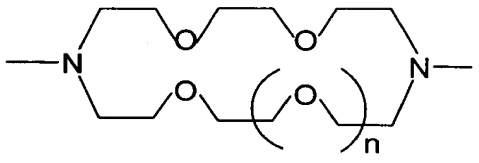
III

in which:

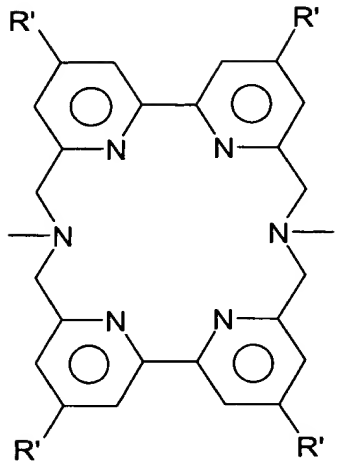
- the ring of formula



is one of the following rings:

1) 

n = 0 or 1
$[N_2O_4]$ macrocycle or cycle (22)
$[N_2O_3]$ macrocycle or cycle (21)

2)  bisbipyridine macrocycle

- Y is a spacer group or spacer arm which consists of a divalent organic radical, selected from the group consisting of linear or branched C_1 to C_{20} alkylene groups optionally containing one or more double bonds and/or optionally containing one or more hetero atoms such as oxygen, nitrogen, sulfur or phosphorus or one or more carbamoyl or carboxamido group(s); C_5 to C_8 cycloalkylene groups; and C_6 to C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with at least one alkyl, aryl or sulfonate group;

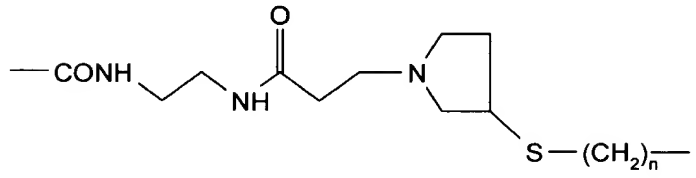
- Z is a functional group capable of bonding covalently to a biological substance;

- R is a methyl group or represents the group -Y-Z;

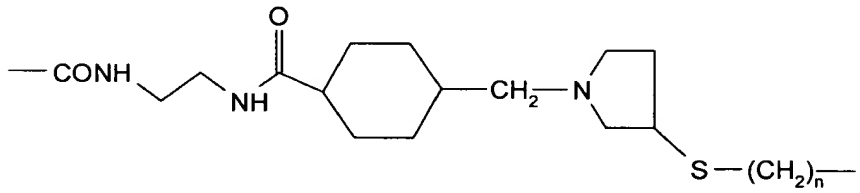
- R' is hydrogen or a group -COOR'' in which R'' is a C_1 to C_{10} alkyl group, or alternatively R' is a group -CO-NH-Y-Z.

33. (Previously Presented) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is bonded to the oligonucleotide via a spacer arm consisting of a divalent organic radical selected from the group consisting of C_1-C_{20} linear or branched alkylene groups optionally containing one or more double bonds or triple bonds and/or optionally containing at least one hetero atom, or one or more carbamoyl or carboxamido group(s); C_5-C_8 cycloalkylene groups; and C_6-C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with at least one alkyl, aryl or sulfonate group.

34. (Previously Presented) The conjugate as claimed in claim 33, wherein the spacer arm:



, or



wherein n = 2 to 6,

or -CONH-$(CH_2)_6$-, wherein the attachment via the group -CONH taking place on the cryptate.

35. (Previously Presented) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is a europium cryptate.

36. (Previously Presented) The conjugate as claimed in claim 35, wherein the rare-earth metal cryptate is the europium cryptate Eu trisbipyridine or Eu [bisdiethoxybipyridine.bipyridine].

37. (Previously Presented) The conjugate as claimed in claim 21, wherein the biological molecule is a cellular receptor, an antigen, an antibody or a nucleic acid.

38. (Previously Presented) The conjugate as claimed in claim 32, wherein the R" alkyl group is a methyl, ethyl or tert-butyl group.

39. (Previously Presented) The conjugate as claimed in claim 33, wherein the at least one hetero atom is oxygen, nitrogen, sulfur, or phosphorus.

40. (Previously Presented) The process according to claim 12, wherein R" is a methyl, an ethyl or a tert-butyl group.

Please add the following new claims:

--41. (New) The process as claimed in claim 1, wherein the biological molecule is not a nucleic acid.

42. (New) The conjugate as claimed in claim 20, wherein the biological molecule is not a nucleic acid.

43. (New) The process as claimed in claim 1, wherein the biological molecule is not an oligonucleotide.

44. (New) The conjugate as claimed in claim 20, wherein the biological molecule is not an oligonucleotide.

45. (New) The process as claimed in claim 1, wherein the oligonucleotide and biological molecule are different.

46. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide and biological molecule are different.--